

Space News Roundup

Vol. 23 No. 16

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National Aeronautics and Space Administration

NASA to go after Palapa on 51-A

NASA will retrieve the Palapa B-2 communications satellite and return it to Earth on Space Shuttle Mission 51-A in November under the terms of an agreement signed Aug. 13.

The agreement between NASA and two insurance organizations—Merrett Syndicates Ltd. and International Technology Underwriters—calls for NASA to be paid for costs incurred in preparing for and executing the retrieval, not to exceed \$4.8 million. The two companies represent the majority of domestic and foreign insurance underwriters that wish to retrieve the communications satellite.

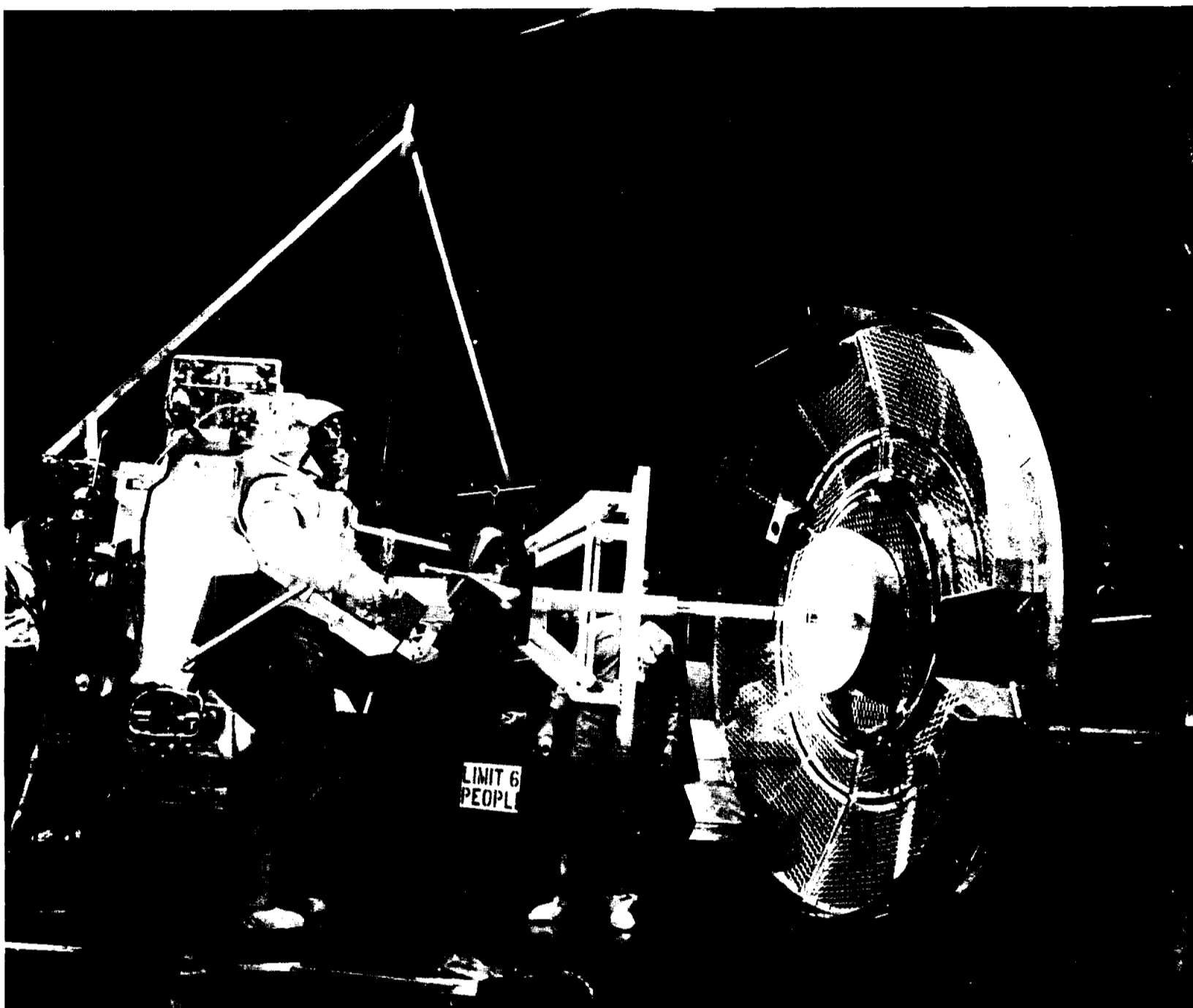
Palapa B-2 was deployed from the Shuttle *Challenger* during STS 41-B on Feb. 6, but failed to achieve the proper transfer orbit when the perigee kick motor failed.

The 51-A crew has been training for the possibility of a retrieval for most of the summer. The crew consists of Commander Rick Hauck, Pilot David Walker and Mission Specialists Joe Allen, Dale Gardner and Anna Fisher.

The Orbiter *Discovery* will be used for the mission, and the current targeted launch date is Nov. 2 at 7:40 a.m. CST. The orbital inclination for the flight is 28.5 degrees, and orbital insertion will take place at 160 nautical miles. The payloads will include two communications satellites, TELESAT-H and a SYNCOM IV.

Current plans call for deployment of the TELESAT on Flight Day 2, followed by deployment of the SYNCOM on Flight Day 3. If all goes well and no backup deployment opportunities are required, Hauck and Walker will execute an Orbital Maneuvering System burn at mission elapsed time three days, one hour and twenty five minutes to begin the rendezvous with Palapa on Flight Day 4.

The Palapa is in a circular orbit between 180 and 190 nautical miles. The *Discovery* will move in and station keep about 200 feet from the satellite as the prime EVA crewman flies over to the satellite with a Manned Maneuvering Unit. Both Gardner and Allen are slated for the EVA tasks.



STS 51-A Mission Specialist Dale Gardner is shown here on the air bearing floor in Bldg. 9A demonstrating the retrieval concept to be used on that flight for grappling the Palapa satellite and bringing it back to Earth. See page 4 for

The crewmember will dock with the slowly spinning satellite using an Apogee Kick Motor Capture Device, or ACD, that resembles the "stingers" which have been used to mount aircraft models in wind tunnels for years. The stinger

will be inserted into Palapa's apogee kick motor nozzle, where it will expand after insertion and allow him to stabilize the rotation using thruster firings on the MMU. Once Palapa is stabilized, the *Discovery* will move in and, with

an artist's conception of what the procedure will look like in space. The mission is now set for launch on Nov. 2.

Fisher piloting the robot arm, grapple the satellite and berth it on a pallet in the payload bay.

These and other details of the rescue plan will be spelled out in a standard Shuttle launch services

agreement which all the parties will sign in the near future. This agreement could include a commitment to relaunch the satellite in July 1985 should the underwriters request it, NASA Headquarters said.

Educator to be first Shuttle passenger

NASA's first passenger aboard the Space Shuttle under the new Space Flight Participant Program (SFPP) will be an American elementary or secondary school teacher, President Reagan announced Aug. 27.

The President made the announcement during a Department of Education ceremony recognizing 202 outstanding public secondary schools. His remarks, carried on the NASA Select television circuit, were followed by a press conference from NASA Headquarters in which Administrator James M. Beggs spelled out some of the details of the program.

NASA established the Space Flight Participant Program after 12 years of study, Beggs said, in order to expand flight opportunities to a wider segment of the population. Private citizens from a variety of working groups—such as educators, artists and news media—will be chosen by their peers in a nationwide program to ultimately come under final consideration by NASA

for a space flight. Beggs said that with a flight rate of 15 to 20 Shuttle missions per year, it would be possible to fly from 2 to 4 passengers each year.

An Announcement of Opportunity (AO) will be released by NASA Headquarters in early October listing the specific qualifications and requirements for applicants. The AO will include a statement of what information is required of applicants to demonstrate their qualifications; the criteria by which applications will be judged; administrative information such as where applications should be sent; the opening and closing dates for the selection process; and other information about the flight opportunity. If educators meet those basic requirements, they can then request the application form from Headquarters.

Alan Ladwig, SFPP Program Manager, said his office expects "an onslaught of applications" once the AO has been released "on or about the first of October." The

second step in the process, he said, will be for applications to be turned over to peer review groups, which will choose two educators per state, as well as from the District of Columbia, Puerto Rico, Guam and the outlying U.S. territories. Those chosen—around 108 people—will then come to JSC next year for a teacher's workshop, where they will learn about the space program and about Shuttle flight in particular.

Through a further review process, those educators will then be winnowed down to 10, whose names will go before a NASA evaluation committee consisting of seven senior Agency officials. Those 10, after coming back to JSC for more briefings and a Class IV physical, will then be winnowed down to 5 names. The 5 names will then go to Beggs, who will select the primary passenger and a backup passenger.

Once the selection is complete, Ladwig said, the educators will spend about 120 hours in training spread out over eight weeks. Follow-

ing the flight, they will spend approximately one year traveling the country and describing the experience.

"This opportunity implies an obligation," Beggs said. "We will want the passenger to share the experience, to communicate it as widely as possible."

The intent is for the educator to help communicate the space flight experience to the public. The application packet will require the educator to submit a proposal describing how the experience can best be shared during the post-flight period. It is expected that the participant will maintain a relationship with NASA for one year and be available for public lectures, television and radio appearances, and other public appearances, especially in elementary and secondary schools.

NASA will also enter into an agreement with the passenger which will limit the commercial exploitation of the experience and which includes requirements with

respect to the passenger's conduct or activities as may be required to protect the integrity of the program. The agreement will also serve as a contract to insure that the passenger will be available to work with NASA following the mission.

Beggs said the program "is a natural for NASA because of this Agency's legislative mandate" to promote the widest possible dissemination of information about the space program. "We will choose people to represent broad walks of life," he said, "who is in reasonably good health. They will be undergoing some rudimentary training, and we see an opportunity for several space flight participants over the coming years."

Beggs said the choice of an educator as the first passenger to fly would "inspire young people to excellence." He reminded listeners that "NASA will live or die depending on the quality of education our young people get," and he said that "a good teacher can have a profound impact on youngsters."

Opinion

The following is the text of a white paper just released from a workshop held at Los Alamos in April which explored scenarios for a return to the Moon. A symposium to be held in Washington, D.C. in October will explore the same topic in more depth.

We scientists, engineers, industrialists, and scholars of law and history were convened at Los Alamos by NASA in the last week of April 1984, to deliberate matters concerning the establishment of a permanently manned base on the Moon's surface. Early in our discussions we realized that a fundamental reason for building a lunar base is to provide opportunities for further exploration. The associated scientific exploration will bring long-term benefits to people on Earth by discovering more ways to harness the forces of nature. But in a broader sense, space exploration stimulates an even greater response.

The exploration of space touches the most profound elements of human nature. It excites our spirit of adventure and challenges us to achieve our human potential. It confronts us with the awesome beauty of creation. Therefore we are convinced that exploration beyond the Earth is a natural function of a space-faring nation. We also are persuaded that this enterprise should promote a continuous human residence on other planetary bodies such as Moon and Mars.

By learning how to build a human society away from Earth, we will learn how to utilize the space ocean. This will increase our scientific knowledge, expand our commercial capabilities, sharpen our technological skills, and open our access to new resources. The scale and nature of this undertaking will create new opportunities for global cooperation and peaceful competition and fire the next generation's enthusiasm to extend space exploration beyond the limits of our own.

We therefore recommend that this nation continue scientific exploration, expand opportunities for commerce, and prepare for the permanent habitation of other planets by adopting the goal of returning to the Moon. Specifically, we propose that a series of investigations be conducted by appropriate institutions, beginning now, to consider permanent facilities on the Moon, and eventually other celestial bodies, as a next step beyond the low Earth-orbit Space Station. We believe that our national civilian space program should incorporate this goal and seek and encourage international participation.

A lunar base represents an investment in future space programs. We know enough about the Moon's resources to foresee the production of oxygen, power, fuel, building materials, and metals. Activities in near-Earth orbits and elsewhere in the solar system can be more productive if they are freed from complete dependence on the Earth's resources. An early commitment to this objective will influence the character of the space projects currently being planned.

In 1972, we withdrew from the Moon. Restoring our capability to visit the lunar surface presents no insurmountable technical obstacles, and creating a permanent base is well within our reach. In this venture from the Earth, we can develop new opportunities to serve the Earth. We can initiate an age of investigation, cooperation, competition, and commerce in which horizons of mankind will expand and aspirations of new generations can be fulfilled. We can continue to explore the heavens and, for the first time, live there.

Space News Briefs

Ariane-3 launches two ComSats

The first mission of the new updated Ariane-3 launcher successfully orbited the ECS-2 and TELECOM-1 communications satellites Aug. 4, the European Space Agency reported. The satellites were inserted into their geosynchronous Earth orbit positions on Aug. 6. The Ariane-3 is the latest version of the basic launcher, but with a higher thrust for the first and second stage Viking engines, a stretched third stage with greater fuel storage capability for a 30% longer flight time, and two strap-on solid rockets for additional thrust.

Lenoir to leave space program

Astronaut William B. Lenoir, who flew aboard STS-5 on the first operational mission of the Space Shuttle, has announced his plans to leave the program effective mid-September to join the management consulting firm of Booz, Allen & Hamilton Inc. Lenoir will join Booz Allen's Space Systems Practice in Arlington, VA and will specialize in commercial use space and space systems. Lenoir, an astronaut since 1967, was a backup science pilot for Skylab 3 and Skylab 4 and a mission specialist on STS-5. Since that flight in November 1982, he has been responsible for the direction and management of mission development within the Astronaut Office.

'Dial-a-Shuttle' available for 41-D

The National Space Institute is again offering the "Dial-a-Shuttle" service during STS 41-D. Callers in the U.S. can listen in on the NASA audio release circuit, which includes air-to-ground conversations, by calling 1-900-410-6272. International callers can listen in by dialing their international access code before dialing the same number.

Bulletin Board

Lunarfins to offer SCUBA course

The JSC SCUBA diving club, the Lunarfins, will offer a six-week basic course beginning Sept. 17. The course will include classroom lectures at the Gilruth Recreation Center and supervised practical experience in the pool. Students who successfully complete the course will be certified by NAUI. Enrollment is limited. The club also schedules regular boat trips to coral reefs, sunken wrecks and platforms in the Gulf, as well as diving vacations in the Caribbean. Interested persons are asked to attend one of the monthly meetings to learn more about the club. For more information on the class, call the Rec Center at x3594.

Osborne group to meet

The Clear Lake Osborne and CP/M group will hold its next meeting beginning at 9 a.m. Sept. 8 at the Gilruth Recreation Center. The group offers presentations, question and answer periods and educational exchanges. For more information on the meeting or the group, call Maynard Huntley at x6441 or write P.O. Box 57613, Webster, TX 77598.

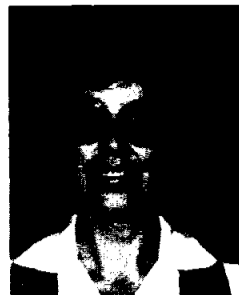
JSC secretaries honored



Barbara Perkins



Mary Gibson



Jannette Halliburton



Josephine Corey



Linda Shirley

Each month a Center secretary is selected to receive the Outstanding Secretary Award. Some of the attributes the most recent selectees have in common, according to their supervisors, are an ability to work efficiently under stressful situations, the ability to effectively prioritize their work, and their complete dependability.

Barbara J. Perkins, who has been secretary to the JSC Comptroller since the spring of 1983, was named Outstanding Secretary for April.

Perkins, according to her supervisor, Larry G. Damewood, has demonstrated "a high level of judgment and discretion in assuring appropriate emphasis on prioritizing schedules, actions, etc."

When Perkins was selected for her current position, budgets, manpower, and financial matters were a totally new environment, Damewood said. "She has quickly adapted to her new assignment and has vastly improved the overall operation of the office routine," he said.

May's Outstanding Secretary, Mary E. Gibson, handles the secretarial requirements for 13 astronauts, including the 41-B and 51-A flight crews. Vance D. Brand, Commander of the 41-B Mission, cited "her strong positive attitude" and "loyalty to the crew" as ways in which Gibson demonstrates her skills as an "outstanding secretary."

Gibson worked at the NASA Guest Center at KSC during the

41-B prelaunch and launch activities. She provided "friendly and patient assistance" to friends and family of crew members and to other invited guests.

Although her workload is getting heavier because of the increased activity of the 51-A crew, Gibson continues to efficiently handle her duties in the Astronaut Office, Brand said.

A. Jannette Halliburton, honoree for June, is "more than a secretary, she is my assistant," says James E. Mager, Chief of Ground Data Systems Division. "She has accomplished the work of two secretaries for the past year."

As Division secretary, she served as single-point contact during the last Spacelab mission for access to the Mission Control Center by foreign nationals. She also interfaced with the Marshall Payload Mission Manager and his staff during the development of the Payloads Operations Control Center.

Halliburton became an expert on the Division's new Xerox 860 Word Processor, enabling her to train the other secretaries in the Division. This saved the time and expense that would have been involved in sending them to a week-long training course, Mager said.

Josephine C. Corey, Outstanding Secretary for July, "became the glue for holding the Division office routine together" when a medical

emergency forced the Chief of Operations Division to be absent for a three-month period. Corey was a "key source of continuity" in responding to personnel and administrative actions.

Her supervisor, John W. O'Neill, said that Corey's ability to deal with people was clearly reflected by her outstanding performance during the emergency period earlier this year. He said she willingly accepts new challenges, and her positive attitude contributes to an office environment where tasks are accomplished efficiently.

Linda R. Shirley, secretary to Clarke Covington, Manager of the Space Station Project Office, was the recipient of the Outstanding Secretary Award for August. Covington said, "She plans and organizes my activities with absolute dependability and attention to detail."

Shirley is noted for her high organizational loyalty and the care she gives to her job and the quality of her work. She has established "exceptionally good working relationships" and her "initiative can get most anything accomplished."

Covington credits Shirley as "a major contributor" in the Space Station Program. "Mrs. Shirley and I work together as a team," he said.

The Outstanding Secretary Award gives official recognition to those individuals who make the extra effort to exceed the performance requirements of their positions.

The Bldg. 30 Auditorium was the site recently of a memorial service for **James A. Kindred**, a training specialist in the Maintenance and Operations Dept. and an employee of Ford Aerospace. Kindred, who passed away June 2 after a lengthy illness, had requested that his final service be held on-site. The eulogy was given by his son, Dwight Kindred, a recent theological seminary graduate and, according to M.M. Ellison of Ford's Training Staff, "was truly befitting of James Kindred and the standards by which he lived his life and raised his family. The service was attended by co-workers and family members, and was a fine tribute to a true patriot and dedicated American whose love for his work, for NASA's

purposes and accomplishments and his country were foremost in his life." The family extends their gratitude.

Shop Talk

Former Astronaut **Jack R. Lousma** won the Republican Senate primary in Michigan Aug. 7 with 62 percent of the vote. Lousma, who flew aboard Skylab 3 for 59 days and was the Commander of STS-3, now faces Democratic incumbent Sen. Carl Levin in the November election. "With this victory, we have

launched a Michigan mission into orbit," Lousma said at a victory celebration in Ann Arbor, where he now lives. Lousma received 325,000 votes to his opponent's 198,000, carrying most of the state in the only statewide race in the primary.

The crews of STS-9 and STS 41-B have been awarded the 1984 Space Award of the Veterans of Foreign Wars, according to VFW Commander-in-Chief **Clifford G. Olson, Jr.** The award is presented annually by the VFW to recognize individual or group contributions in the field of space. The award ceremony was held Aug. 22 during the VFW's 85th National Convention in Chicago.

Cookin' in the Cafeteria

Week of Sept. 3-7, 1984

Monday: French Onion Soup; BBQ Sliced Beef, Parmesan Steak, Spare Rib w/Kraut, Chili & Macaroni (Special); Ranch Style Beans, English Peas, Mustard Greens. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Split Pea Soup; Meatballs & Spaghetti, Liver & Onions, Baked Ham w/Sauce, Corned Beef Hash (Special); Buttered Cabbage, Cream Style Corn, Whipped Potatoes.

Wednesday: Seafood Gumbo; Cheese Enchiladas, Roast Pork w/Dressing, BBQ Link (Special); Pinto Beans, Spanish Rice, Turnip Greens.

Thursday: Beef & Barley Soup; Roast Beef w/Dressing, Fried Perch, Chopped Sirloin, Chicken Fried Steak (Special); Whipped Potatoes, Peas & Carrots, Buttered Squash.

Friday: Seafood Gumbo; Fried Shrimp, Baked Fish, Beef Stroganoff, Fried Chicken (Special); Okra & Tomatoes, Buttered Broccoli, Carrots in Cream Sauce.

Week of Sept. 10-14, 1984

Monday: Cream of Potato Soup; Franks & Sauerkraut, Pork Chop,

Potato Baked Chicken, Meat Sauce & Spaghetti (Special); French Beans, Buttered Squash, Buttered Beans. Standard Daily Items: Roast Beef, Baked Ham, Fried Chicken, Fried Fish, Chopped Sirloin. Selection of Salads, Sandwiches and Pies.

Tuesday: Navy Bean Soup; Beef Stew, Liver & Onions, Shrimp Creole, Smothered Steak w/Dressing (Special); Corn, Rice, Cabbage, Peas.

Wednesday: Seafood Gumbo; Roast Beef, Baked Perch, Chicken Pan Pie,

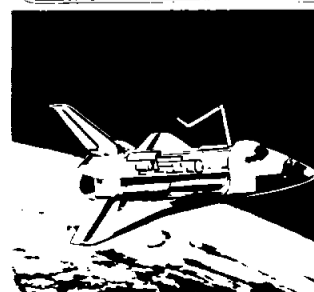
Salmon Croquette (Special); Mustard Greens, Italian Green Beans, Sliced Beets.

Thursday: Beef & Barley Soup; Beef Tacos, Diced Ham w/Lima Beans, Stuffed Cabbage (Special); Ranch Style Beans, Brussels Sprouts, Cream Style Corn.

Friday: Seafood Gumbo; Fried Shrimp, Deviled Crabs, Ham Steak, Salisbury Steak (Special); Buttered Carrots, Green Beans, June Peas.

NASA
Lyndon B. Johnson Space Center

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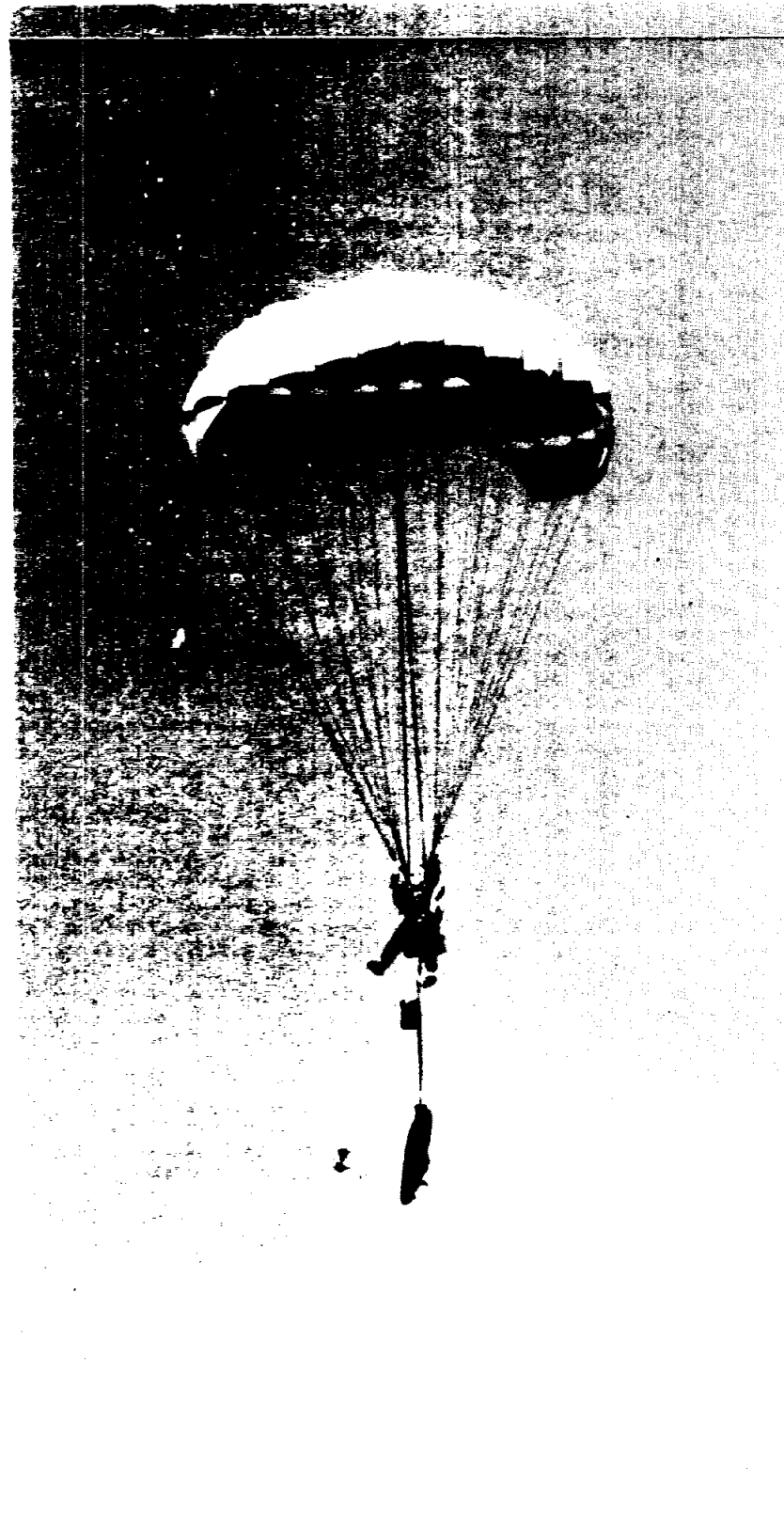


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Editor: Brian Welch



Ah, the triumphs and travails of astronaut candidacy. Training for the new crop of candidates has taken them from the forests of Washington State where a nature survival course was held in July, to the waters of Florida where water survival was the topic. Our man on the scene, National Geographic photographer Otis Imboden, recorded these images of what the candidates have experienced during those two training trips. Above, hikes in the woods and various lectures in the Great Outdoors were just part of the nature course, which included sessions on building fires, fishing with rudimentary gear and the like. Water survival training in Florida, at right, included leaving the safe confines of a helicopter for a quick trip to the water below, raft orientation, below, and parachute experience, left.



Gilruth Center News

Call x3594 for more information

Round dance — Dance up a storm with round dance techniques taught in this 13-week class which begins Sept. 5 and meets from 8 to 9:30 p.m. for beginners and 9:30 to 11 p.m. for intermediates. The cost is \$78 per couple.

CPR — Learn the basics of cardio-pulmonary resuscitation in two short days in this class which meets Sept. 18 and 19 from 7 to 9:30 p.m. The cost is \$10 per person.

Dancercise — Recoup and recondition with dancercise, a flattering way to exercise as well as a good foundation for dance. The six-week course begins Sept. 4 and meets Tuesdays and Thursdays from 5:15 to 6:15 p.m. The cost is \$25 per person.

Aerobics — This course is specialized to develop total fitness with an emphasis on muscular tone and cardio-vascular health. The class meets Tuesdays, Wednesdays and Thursdays from 4:15 to 5:15 p.m. at a cost of \$30 per person. The eight-week session begins Sept. 4.

Plumbing repairs — If you're tired of high bills for minor plumbing repairs, this course is designed for you. The class meets one night, Sept. 4, from 7:15 to 10:15 p.m. at a cost of \$20 per person. Books and materials are optional.

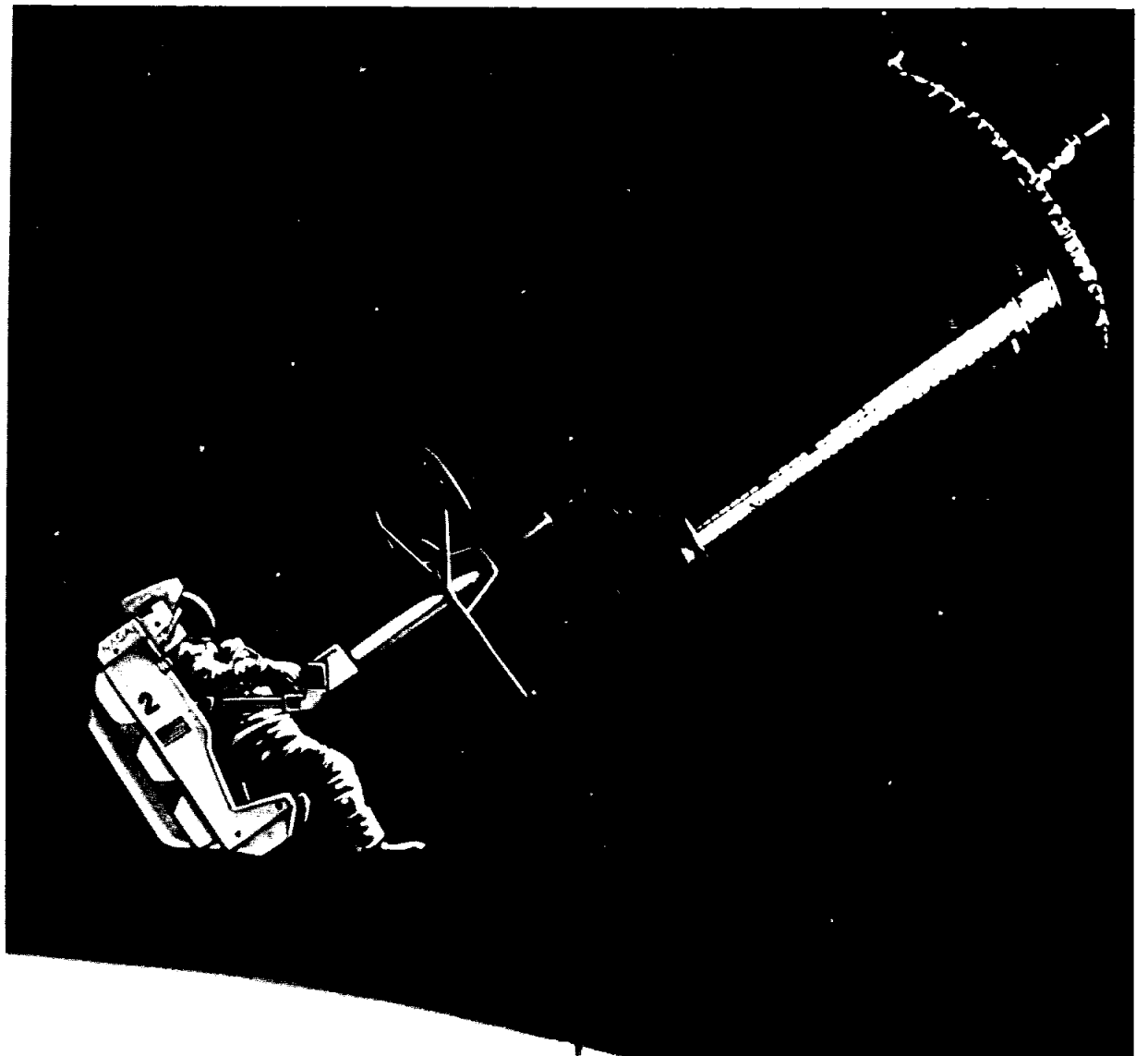
Electrical repairs — Learn how to fix and trouble-shoot wiring around your house in this one-day class which meets from 7:15 to 10:15 p.m. Sept. 5. Books and materials are optional.

Men's weight training — This class meets Tuesdays and Thursdays for four weeks beginning Sept. 4. The class times are 8 to 9 p.m. and the cost is \$20 per person.

Guitar lessons — Learn the basics of guitar in this class which meets in both beginner's and intermediate's sessions. Beginners meet from 7 to 8 p.m. for six weeks beginning Sept. 5. Intermediates meet from 8 to 9 p.m. for six weeks beginning Sept. 5. The cost for either class is \$25 per person.

Home maintenance and repair — This survey course of what makes a house tick and how to keep it running meets for eight weeks beginning Sept. 5. Class meets from 7 to 9 p.m. and the cost is \$40 per person, materials included.

Country western dance — Back by popular demand, this course begins Sept. 10 for six weeks in sessions for beginners and the more advanced. Beginners meet from 8:45 to 10:15 p.m., while the advanced class meets from 7:15 to 8:45 p.m. The cost is \$20 per couple for either class, and enrollment is limited.



This artist's conception shows what the Palapa retrieval will look like during the 51-A flight in November. The stinger device mounted to the front of the MMU will expand once inserted into the apogee kick motor nozzle and allow the astronaut to bring the satellite's rotation to a halt.

Roundup Swap Shop

Ads must be under 20 words total per person, double spaced, and typed or printed. Deadline for submitting or cancelling ads is 5 p.m. the first Wednesday after publication. Send ads to AP 3 Roundup, or deliver them to the Newsroom, Building 2 annex. No phone-in ads will be taken. Swap Shop is open to JSC federal and on-site contractor employees for non-commercial personal ads.

Property & Rentals

For lease: Pearlland/Dixie Hollow 3-2-2, formal dining, fireplace, inside utility room, fenced, new paint, \$525/mo. Call 482-6609.

For lease: Pipers Meadow/CLC 3-2-2, ceiling fan, fenced, new paint, refrigerator, clean, \$550/mo. Call 482-6609.

Immediate sale: Seabrook/Miramar 4-2-2 brick home, fenced, close to schools, good investment. Call 488-0719.

For lease: Egret Bay condo, 1-1-2, W/D, FPL, microwave, miniblinds, water view, swimming pool, boat ramp, \$375/mo. Call 333-5354 or 946-2972.

For rent: Galveston-by-the-Sea condo, 2 BR, furnished, for rent by day (2 minimum), week or month. Call Clements, Jr., 474-2622.

For rent: Galveston Gulf front condo, treat yourself to a relaxing 2-day to 1-month vacation in this completely furnished condo. Call Nussman, 488-7762.

For lease: 10 acres, Alvin area, fenced, on paved road, good for horses, cattle. Call Damewood, 482-5572.

For sale: 75'x150' heavily wooded lot with lake view, in Seabrook. Call 474-3181.

For lease: El Dorado Trace condo, 2-2½, FPL, W/D, dining room, smoke and burglar alarms, covered parking, recreation amenities, no pets/children, \$480/mo. plus deposit. Call 488-5967 after 5 p.m.

For sale: Camino South 4-2-2, FPL, ceiling fan, formal dining, spacious, VA loan assumption, low equity, 12.5% no approval, by owner. Call 480-6750.

For lease: Forest Bend townhome, 3-2, 1,500 sq. ft., W/D hookup, DW, drapes, storage, pool, fenced, 26ft. above sea level, CCISD near Friendswood, \$600/mo. Call (409) 763-5460 after 6 p.m.

For lease/purchase: Bayview 3-2-2, brick, new carpet, CC schools, apply rent to purchase, \$440/mo. Call 486-0462 after 6 p.m.

For lease: Egret Bay 1-1-2 condo, FPL, W/D, lots of space, 2 pools, boat ramp. Call Actkinson, x6451 or 482-7061.

For lease/purchase: Forest Bend 4-2-2, \$54,000 FHA assumable, low equity, \$495/mo. plus deposit. Call 334-4184.

For lease: Pebblebrook condos, 1 BR, vaulted ceiling, W/D, pool, tennis, \$350/mo. plus deposit. Call Becky, x6158 or x3210.

For lease: University Trace condo, 2-2, upstairs unit near pool, W/D, alarm system, \$495/mo. Call 486-5342 evenings.

For sale: Baywind II townhouse, reduced \$5,000, deluxe 2-story 1-1-1,

good condition, FPL, W/D connections, tennis, pool, \$35,000. Call Elaine, x5441 or 334-2402.

For sale: Baywind II condo, reduced \$5,600, 2-2-3, new carpet, good condition, W/D, FPL, pool, tennis, \$36,900. Call Elaine, x5441 or 334-2402.

For lease: League City Newport 3-2-2, fenced, new paint, framed garden, 15 min. from NASA, central AC/heat, quiet neighborhood, \$550/mo. plus deposit. Call Harriet Rockwood, 486-0322.

For sale: Walden on Lake Conroe, beautiful wooded water view lot on Hemmingway Dr., owner will finance, \$25,000. Call Joyce, 486-1229 or 643-5427.

Cars & Trucks

1983 Datsun 280ZX, T-top, leather seats, digital dash, 5 spd., 16K miles. Call 280-9210, x321 or 486-9071 evenings.

1976 Mercury Marquis Brougham, 95K miles, PS, PB, AC, auto, AM/FM stereo, burns no oil, some minor rust, \$1,750/OBO. Call Frank, x5861 or x5863.

1976 MG Midget, AM/FM/cassette, tires in excellent condition, rebuilt transmission and engine, \$2,000. Call Shelly, x5881.

1981 Pontiac T1000, auto, AC, 34K miles, excellent condition, good mileage, \$3,250. Call 488-4453.

1973 Volvo, \$650. Call 996-0280.

1980 Honda Civic 1500GL, AC, AM/FM/cassette, low miles, blue, 2-door, \$3,000. Call 470-9005.

1975 GMC Coachman 20' motor home, 41K miles, has all appliances, Coleman AC, sleeps 6, \$8,500. Call 482-4874.

1973 Olds Delta 88, auto, AC, PS, PB, AM/FM/8-track, cruise, great shape in and out, \$2,450. Call McNeely, x6347 or 482-5837.

1972 Monte Carlo, 81K miles, good condition, AC needs work, \$750. Call Dick, x2766.

1979 MG Midget, \$1,850. Call 474-3181.

1979 Cadillac Sedan DeVille, fully loaded, 70K miles, new paint and radials, \$5,200. Call 485-5051 after 5 p.m.

1981 Honda Prelude, 5 spd., silver w/burgundy interior, factory 4-speaker stereo, power sunroof, excellent condition, \$6,500. Call BeeJay, x3278 or 486-8156 after 5 p.m.

1975 Chevrolet Vega, rust-brown, AM/FM/Pioneer cassette deck, \$700/OBO. Call 485-2334.

1979 Fiat Spider 2000 convertible, auto, mag wheels, 52K miles, leather interior, good condition, \$4,200/OBO. Call Rex, x5441.

1973 Dodge wagon, blue, auto, AC,

PS, PB, AM/FM, one owner, good condition, \$995. Call 482-5197.

1977 Malibu Classic, V-8, 68K miles, AM/FM/8-track, CB, AC, very good condition, \$1,900. Call 480-7200 after 5 p.m.

1978 Pontiac Trans Am, 400 cu. in., PS, PB, AC, auto, stereo, \$3,995; 1977 Pontiac Bonneville, PS, PB, AC, auto, stereo, fine condition, \$2,495. Call Jim, 280-3674.

1977 Plymouth Volare, 225 V-6, red, 4 door, auto, AC, AM/FM, \$1,350. Call Tim, 486-8153, x336 or 482-4902.

1978 Thunderbird, white w/vinyl top, V-8, 2-door, AC, AM/FM/8-track/CB, cruise, low miles, original owner, \$3,100. Call Bill Palmer, 488-0644 after 5 p.m.

1976 Jaguar XJ12L, 4-door, excellent condition, PS, PB, auto, stereo, \$8,200. Call 480-0722.

1979 Malibu Classic, 2-door, V-8, AC, AM/FM/cassette, 75K miles, very good condition, new tires, \$2,600. Call Kathy, x4709 or 434-9469 after 6:30 p.m.

1980 Toyota Tercel, one owner, 33K miles, AC, stereo, auto, plush, \$4,500. Call 488-5564.

1972 Dodge Challenger, green, runs well, no major problems, AC, AM radio, best offer. Call 795-5710 after 5 p.m.

1976 Triumph TR7, red/black, auto, needs engine work, good tires, \$1,195/OBO. Call Jerry, x3458 or 480-8220 after 6 p.m.

1979 Mercury Zephyr, auto, AC, power, new tires, 44K miles, \$2,500. Call 471-5396.

Boats & Planes

Cherokee 140, 2700 TT, 700sm OH New Annual, Recent Imron Paint, Navcom Xpndr, ADF \$10,500. Call Alexander, x2901.

For rent: Piper Lance aircraft, 6-place, club seating, \$75/hr wet. Call Damewood, 482-5572.

Hobie Cat, 16 ft., excellent condition, \$2000/neg. Call after 5 weekdays/anytime weekends, 488-2876.

J-24, excellent condition, many extras, 4-wheel trailer, outboard motor, \$13,000/firm. Call 485-2215 after 5 p.m.

Cycles

10 speed bike, 24" size, \$40. Also, custom-built BMX bike, \$50. Call Schultz, x3541 or 538-2082.

Yamaha Enduro, excellent condition, \$500. Call 474-3181.

Musical Instruments

Bundy clarinet, good condition, \$100. Call 333-3114.

Vito alto sax, good condition, \$200. Call Cornelius, x3803 or 428-2952 after 5 p.m.

Audiovisual & Computers

Sharp cassette deck, 4 yrs old, original cost over \$200, needs work, \$25. Call McNeely, x6347 or 482-5837. Morantz UA 300 series speakers, \$200/pr. Still in box/new 120 watt RMS system, \$250/pr. Call 488-1625.

Household

Cutco cutlery, 8 kitchen knives, 2 forks, like new, \$125. Antique library table, hanging lamp, 2 chairs, area rug 6'x9'. Call 333-9234.

Full bed headboard and footboard, solid wood, metal side support rails, \$35. Call Frank, x5861.

Kenmore freezer, 15.3 cu.ft., like new, \$250. Call Henderson, x3286.

Roper kitchen gas range, like new, used 5 mos., \$250. Call Day, x2191 or 664-9472.

Pine dining room set, table w/2 extensions, 2 sidechairs, 2 armchairs, \$275. Call Bob, 554-2250 after 5 p.m.

Whirlpool almond color gas dryer, very good condition. Will swap for a comparable electric dryer or sell, \$175. Call Gaye, x3911.

Electric range, combined lower oven and eye level oven, \$195. Call 480-2367.

Bunkbeds w/storage drawer, \$125; dresser/hutch, \$90; desk, \$100; twin mattress sets, \$50/pr. Call 482-6027.

King Koil orthopedic mattress for double bed. Call Madeline, x2303.

Sears Coldspot 19.6 cu.ft. frostless freezer, white, \$200. Maytag dryer, white, \$100. Call 482-5984.

Decorator coffee table, 3'x5', goldleaf w/glass top, originally \$1200, now \$350. Call 488-5564.

Walnut-inlay top lamp/end tables, 3 drawers w/brass pulls, \$125/ea. Call 488-5564.

Pets

Two young, blue parakeets, M & F, plus medium-sized cage, \$20. Call Eric, x3386 or 665-6403.

Wanted

Electric trains. Call Don, x2449.

Child care, our home preferred (negotiable) in Timber Cove (Taylor Lake Village). Call Woody, x2221 or 538-3408 evenings.

Camper top for long bed pickup, prefer molded fiberglass. Call Giralda, x3833 or 921-7212.

Carter AVS-4638S carburetor w/intake manifold for a Dodge 383 cu.in. Cash or swap for a Holley double pumper 6R2762 with Edelbrock Street-

master 383 cu.in. manifold. Call Grissom, x6101.

Comic books, any year. Call Tom, x4645 or 482-9172.

Metro (15 Pax) vanpool forming from LaPorte/Fairmont Park area to JSC, 7:30 a.m. to 4:00 p.m. Call Rod, x3901 or Bryan, 739-4071.

Miscellaneous

Lost: Earring, drop style w/amber glass bead. Possibly lost in 9a, 30 or 2. Reward. Call Billie, x5111 or 334-4387 after 5 p.m.

Nikon EM camera, 50mm lens, case, strap, flash, 80-200mm zoom lens w/case, excellent condition. Call 333-9234.

Winnebago aluminum cover for 8-ft pickup bed, \$225. Camping seats/table for Ford pickup, \$100. Call 482-7073.

Johnson 9.9hp motor, low profile, short shaft, very low time, \$395. Call 486-5133 after 5 p.m.

Fan/motor unit from central air conditioner w/shroud and screen, 1/3hp, 220 vac motor, \$20. Call Samouche, x4727.

Metal utility bldg, 10'x6', never out of box, \$110. Call Bob, 554-2250 after 5 p.m.

Sliding glass door, complete w/frame and screen, \$25. Call 486-5217 after 5 p.m.

Aluminum cover for Toyota pickup, \$195. Call 480-2367.

Three 18 gal. galvanized tanks, very heavy wall, 10"x16"x29", excellent condition, \$10 ea. Call Giralda, x3833 or 921-7212.

Rent a mini motor home, self-contained including onboard power plant, roof air, the comforts of home on wheels. Daily or weekly rates. Call Dave, x5111 or 480-0202 after 5 p.m.

Solid maple butcher block tabletops, with or without base, 24"x30", 30"x30", 30"x48", under \$100. Matching chairs also available. Call Ray, x5258 or 554-2908 after 6 p.m.

Leica M4-P, camera body, new/never used, still in box w/complete warrantee, \$850. Call 470-8991 after 6 p.m.

Office desk and matching chair w/arms, \$150. Call 486-5342 after 5 p.m.

Stevens model 9478 3" 12-gauge single shot shotgun w/black sheep case, \$65. Call Jim, 482-9116.

Collector guns, Winchester 94 Buffalo Bill Commemorative, Savage 71 Stevens favorite, Rossi double 12-gauge, Sheridan 5mm air rifle. All A-1 condition. Call 488-5445 after 6 p.m.

Large Craftsman mower, 5hp, 110V AC electric start, self-propelled, excellent condition, \$325. Call 921-7212.

Jayco pop-up camper, sleeps 8, good condition, \$895. Call 482-1582 after 6 p.m.